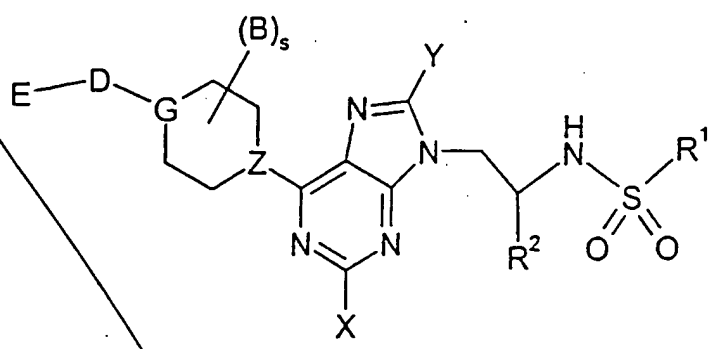
contd.
A2



I

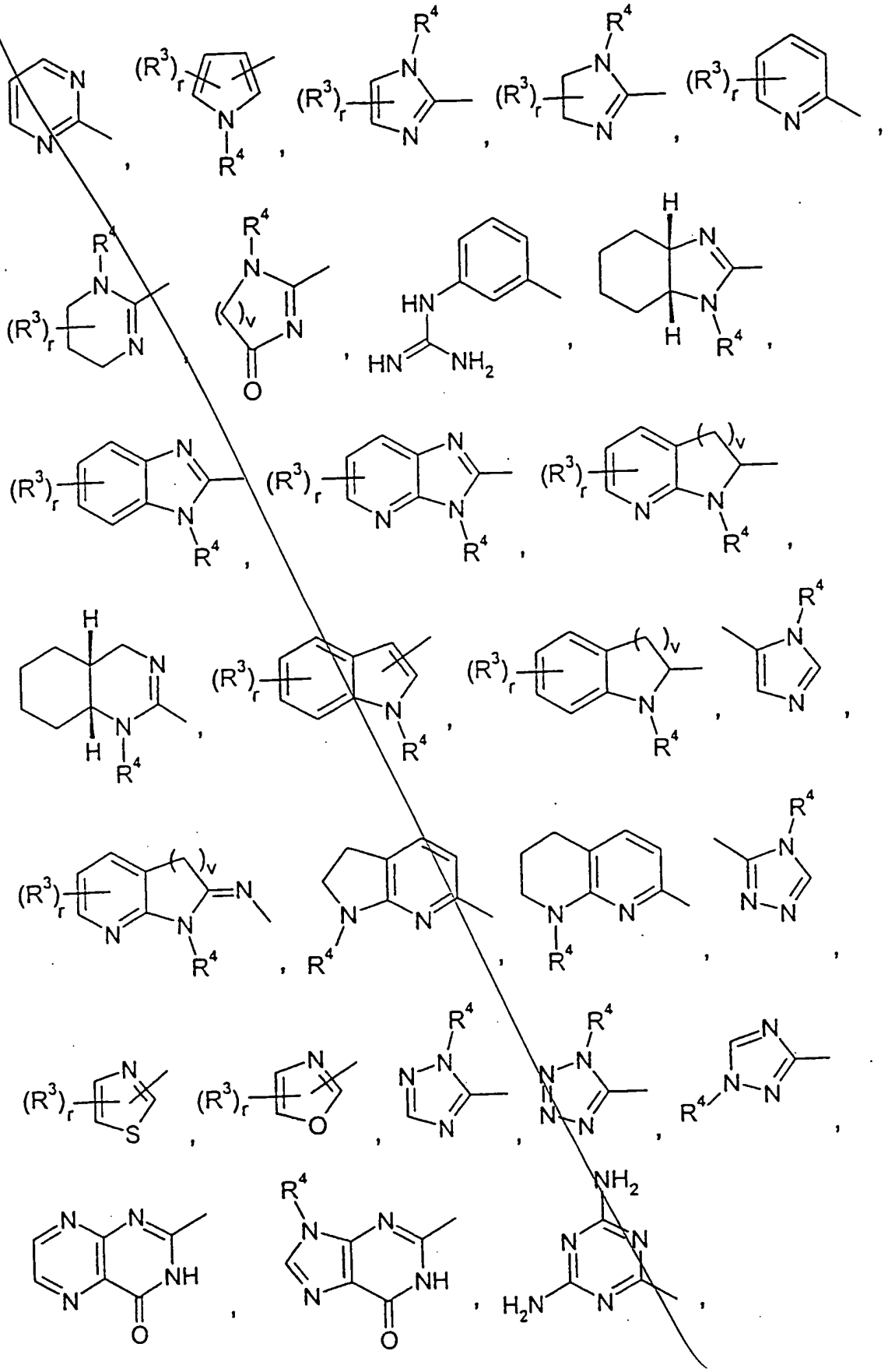
Sub
B1

wherein B is (C_1-C_{18})-alkyl, (C_3-C_{14})-cycloalkyl, (C_3-C_{14})-cycloalkyl-(C_1-C_8)-alkyl-, (C_5-C_{14})-aryl, (C_5-C_{14})-aryl-(C_1-C_8)-alkyl-, (C_5-C_{14})-heteroaryl, (C_5-C_{14})-heteroaryl-(C_1-C_8)-alkyl-, fluorine chlorine, bromine, hydroxy, cyano, trifluoromethyl, nitro, hydroxycarbonyl-, (C_1-C_6)-alkoxy, (C_1-C_6)-alkoxy-(C_1-C_6)-alkyl-, (C_1-C_6)-alkoxycarbonyl-, (C_1-C_6)-alkoxy-(C_1-C_6)-alkoxy-, (C_5-C_{14})-aryl-(C_1-C_8)-alkylcarbonyl-, (C_1-C_6)-alkanoylamino-, (C_1-C_6)-alkylsulfonylamino-, (C_5-C_{14})-arylsulfonylamino-, (C_1-C_6)-alkylamino-, di-$((C_1-C_6)$-alkyl)amino-, (C_1-C_6)-alkylsulfonyl-, aminosulfonyl-, (C_5-C_{14})-arylsulfonyl-, (C_5-C_{14})-aryl-(C_1-C_8)-alkylsulfonyl-, (C_5-C_{14})-aryl and (C_5-C_{14})-heteroaryl, where all residues B are independent of one another, or B denotes an aromatic or non-aromatic ring system fused to the 6-membered ring containing the groups G and Z;

D is selected from the group consisting of $-C(O)-N(R^6)-$, $-NR^6-C-(O)-$, $-NR^6-C(O)-N(R^6)-$, $-NR^6-C(S)-N(R^6)-$, $-C(S)-N(R^6)-$ or $-C(R^6)=N-N(R^6)-$, where the divalent Ds are bonded to E via the free bond on their right side;

contd. Q2

- E is selected from the group consisting of



Sub B1

R^6-C(=NR^6)-NR^6- and $R^6R^{6'}$N-C(=NR^6)-;

G is selected from the group consisting of N, CH and C((C_1-C_4)-alkyl);

X is selected from the group consisting of hydrogen, $-NR^6R^{6'}$, fluorine, chlorine, bromine, $-OR^6$, $-SR^6$, hydroxy-(C_1-C_6)-alkyl-NH-, (hydroxy-(C_1-C_6)-alkyl)$_2$N-, amino-(C_1-C_6)-alkyl-NH-, (amino-(C_1-C_6)-alkyl)$_2$N-, hydroxy-(C_1-C_6)-alkyl-S- and -NH-C(O)-R^6;

Y is selected from the group consisting of R^6, fluorine, chlorine, bromine, cyano, $-NR^6-R^{6'}$, $-OR^6$, $-SR^6$ and hydroxy-(C_1-C_6)-alkyl-NH-;

Z is N or CH:

R^1 is selected from the group consisting of (C_1-C_{18})-alkyl, (C_3-C_{14})-cycloalkyl, (C_3-C_{14})-cycloalkyl-(C_1-C_8)-alkyl-, (C_5-C_{14})-aryl, (C_5-C_{14})-aryl-(C_1-C_8)-alkyl-, (C_5-C_{14})-heteroaryl or (C_5-C_{14})-heteroaryl-(C_1-C_8)-alkyl- where aryl, heteroaryl, cycloalkyl and alkyl can be substituted one, two or three times by at least one member of the group consisting of fluorine, chlorine, bromine, cyano, trifluoromethyl, nitro, hydroxycarbonyl-, (C_1-C_6)-alkyl, (C_1-C_6)-alkoxy, (C_1-C_6)-alkoxy-(C_1-C_6)-alkyl-, (C_1-C_6)-alkoxycarbonyl-, $(C_1-$

C_6)-alkylcarbonyl-, (C_1-C_6)-alkylaminocarbonyl-, (C_1-C_6)-alkoxy-(C_1-C_6)-alkoxy-, (C_5-C_{14})-arylcarbonyl-, (C_5-C_{14})-aryl-(C_1-C_8)-alkylcarbonyl-, (C_1-C_6)-alkanoylamino-, (C_5-C_{14})-arylsulfonylamino-, (C_1-C_6)-alkylsulfonylamino-, (C_1-C_6)-alkylamino-, di-((C_1-C_6)-alkyl)amino-, (C_1-C_6)-alkylsulfonyl-, (C_1-C_6)-alkylaminosulfonyl-, (C_5-C_{14})-arylaminosulfonyl-, (C_5-C_{14})-aryl-(C_1-C_8)-alkylaminosulfonyl-, (C_5-C_{14})-arylsulfonyl-, (C_5-C_{14})-aryl-(C_1-C_8)-alkylsulfonyl-, (C_5-C_{14})-aryl and (C_5-C_{14})-heteroaryl;

R^2 is selected from the group consisting of $-C(O)R^5$, $-C(S)R^5$, $-S(O)_pR^5$, $-P(O)R^5-R^{5'}$ and a 4-membered to 8-membered saturated or unsaturated heterocycle which contains 1, 2, 3 or 4 heteroatoms selected from the group consisting of nitrogen, oxygen and sulfur;

R^3 is selected from the group consisting of (C_1-C_{18})-alkyl, (C_3-C_{14})-cycloalkyl, (C_3-C_{14})-cycloalkyl-(C_1-C_8)-alkyl-, (C_5-C_{14})-aryl, (C_5-C_{14})-aryl-(C_1-C_8)-alkyl-, (C_5-C_{14})-heteroaryl, (C_5-C_{14})-heteroaryl-(C_1-C_8)-alkyl-, fluorine, chlorine, bromine, hydroxy, cyano, trifluoromethyl, nitro, hydroxycarbonyl-, (C_1-C_6)-alkoxy, (C_1-C_6)-alkoxy-(C_1-C_6)-alkyl-, (C_1-C_6)-alkoxycarbonyl-, (C_1-C_6)-alkylcarbonyl-, (C_5-C_{14})-arylcarbonyl-, (C_1-C_6)-alkylaminocarbonyl-, (C_1-C_6)-alkoxy-(C_1-C_6)-alkoxy-, (C_5-C_{14})-aryl-(C_1-C_8)-alkylcarbonyl-, (C_1-C_6)-alkanoylamino-, (C_1-C_6)-alkylsulfonylamino-, (C_5-C_{14})-arylsulfonylamino-, (C_1-C_6)-alkylamino-, di-((C_1-C_6)-alkyl)amino-, (C_1-C_6)-alkylsulfonyl-, aminosulfonyl-, (C_5-C_{14})-arylsulfonyl-, (C_5-C_{14})-aryl-(C_1-C_8)-alkylsulfonyl-, (C_5-C_{14})-aryl and (C_5-C_{14})-heteroaryl,

where alkyl R^3s are independent of one another;

R^4 is selected from the group consisting of hydrogen, (C_1-C_{10})-alkyl, (C_3-C_{14})-cycloalkyl, (C_3-C_{14})-cycloalkyl-(C_1-C_8)-alkyl-, $C_5-C_{14})$-aryl and (C_5-C_{14})-aryl-(C_1-C_8)-alkyl-;

R^5 and R^5 are individually selected from the group consisting of hydroxy, (C_1-C_8)-alkoxy, (C_5-C_{14})-aryl-(C_1-C_8)-alkoxy-, (C_1-C_8)-alkylcarbonyloxy-(C_1-C_4)-alkoxy-, (C_5-C_{14})-aryl-(C_1-C_8)-alkylcarbonyloxy-(C_1-C_8)- alkoxy- and $NR^6R^{6'}$, where R^5 and $R^{5'}$ are independent of one another;

R^6 and $R^{6'}$ are individually selected from the group consisting of hydrogen, (C_1-C_{18})-alkyl, (C_3-C_{14})-cycloalkyl, (C_3-C_{14})-cycloalkyl-(C_1-C_8)-alkyl-, (C_5-C_{14})-aryl where in the aryl, one, two, three, four or five ring carbon atoms can be replaced by heteroatoms selected from the group consisting of nitrogen, oxygen and sulfur, and (C_5-C_{14})-aryl-(C_1-C_8)-alkyl- where in the aryl of the aryl-alkyl-, one, two, three, four or five ring carbon atoms can be replaced by heteroatoms selected from the group consisting of nitrogen, oxygen and sulfur, or R^6 and $R^{6'}$ together with the nitrogen atom to which they are bonded form a 4-membered to 8-membered ring system which in addition to the nitrogen atom to which R^6 and $R^{6'}$ are bonded can contain one, two or three ring heteroatoms selected from the group consisting of nitrogen, oxygen and sulfur and which can be unsaturated or saturated,

contd. Q2

where all R^6 and $R^{6'}$ are independent of one another;

r is zero;

Sub B1

s is zero, one, two, three or four;

v is one, two or three; and

p is one or two;

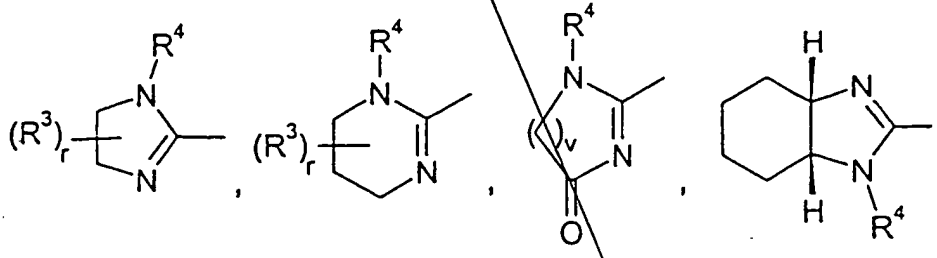
in all their stereoisomeric forms and mixtures thereof in all ratios, and their non-toxic, physiologically tolerable salts; and

where, instead of the purine structure shown in formula I, also a 3-deazapurine structure, a 7-deazapurine structure or 1 7-deaza-8-azapurine structure is present.

Claim 2 (amended) A compound of claim 1 wherein B is (C_1-C_{18})-alkyl or hydroxy, and all Bs are independent of one another;

D is $-C(O)-N(R^6)-$, bonded to the group E via its nitrogen atom;

E is selected from the group consisting of



contd Q2

and $R^6R^{6'}N-C(=NR^6)-$;

Sub B1

G is N or CH;

X is hydrogen;

Y is hydrogen;

Z is N or CH;

R^1 is selected from the group consisting of (C_1-C_{18})-alkyl, (C_3-C_{14})-cycloalkyl, (C_3-C_{14})-cycloalkyl, (C_3-C_{14})-cycloalkyl-$(C_1-(C_8)$-alkyl-, (C_5-C_{14})-aryl, (C_5-C_{14})-aryl-(C_1-C_8)-alkyl-, (C_5-C_{14})-heteroaryl and (C_5-C_{14})-heteroaryl-(C_1-C_8)- alkyl- where aryl, heteroaryl, cycloalkyl and alkyl can be substituted one, two or three times by at least one member selected form the group consisting of fluorine, chlorine, bromine, cyano, trifluoromethyl, nitro, hydroxycarbonyl-, (C_1-C_6)-alkyl, (C_1-C_6)-alkoxy, (C_1-C_6)-alkoxy-(C_1-C_6)-alkyl, (C_1-C_6)-alkoxycarbonyl-, (C_1-C_6)-alkylcarbonyl-, (C_1-C_6)-alkylaminocarbonyl-, (C_1-C_6)-alkoxy-(C_1-C_6)-alkoxy-(C_1-C_6)-alkoxy-, (C_5-C_{14})-arylcarbonyl-, (C_5-C_{14})-aryl-(C_1-C_8)-alkylcarbonyl-, (C_1-C_6)-alkanoylamino-, (C_5-C_{14})-arylsulfonylamino-, (C_1-C_6)-alkylsulfonylamino-, (C_1-C_6)-alkylamino-, di-$((C_1-C_6)$-alkyl)amino-, (C_1-C_6)-alkylsulfonyl-, (C_1-C_6)-alkylaminosulfonyl-, (C_5-C_{14})-arylsulfonyl-, (C_5-C_{14})-aryl-(C_1-C_8)-alkylsulfonyl-, (C_5-C_{14})-aryl and (C_5-C_{14})-heteroaryl;

contd. Q2

R^2 is $-C(O)R^5$;

Sub B1

R^3 is selected from the group consisting of (C_1-C_6)-alkyl, (C_3-C_{14})-cycloalkyl, (C_3-C_{14})-cycloalkyl-(C_1-C_8)-alkyl-, fluorine, chlorine, bromine, cyano, trifluoromethyl, hydroxy or (C_1-C_6)-alkoxy, where all R^3s are independent of one another;

R^4 is hydrogen or (C_1-C_6)-alkyl;

R^5 is hydroxy or (C_1-C_8)-alkoxy;

R^6 and $R^{6'}$ are selected from the group consisting of hydrogen, (C_1-C_6)-alkyl, (C_3-C_{14})-cycloalkyl, (C_3-C_{14})-cycloalkyl-(C_1-C_8)-alkyl-, (C_5-C_{14})-aryl where in the aryl, one, two or three ring carbon atoms can be replaced by heteroatoms selected from the group consisting of nitrogen, oxygen and sulfur, and (C_5-C_{14})-aryl-(C_1-C_8)-alkyl- where in the aryl of the aryl-alkyl-, one, two or three ring carbon atoms can be replaced by heteroatoms selected from the group consisting of nitrogen, oxygen and sulfur,

or R^6 and $R^{6'}$ together with the nitrogen atom to which they are bonded form a 4-membered to 6-membered ring system which in addition to the nitrogen atom to which R^6 and $R^{6'}$ are bonded can contain one, two or three ring heteroatoms selected from the group consisting of nitrogen, oxygen and sulfur and which can be unsaturated or saturated,

where all R^6 and $R^{6'}$s are independent of one another;

contd. Q2

r is zero, one, two, three or four;

s is zero, one, two, three or four;

v is one, two or three;

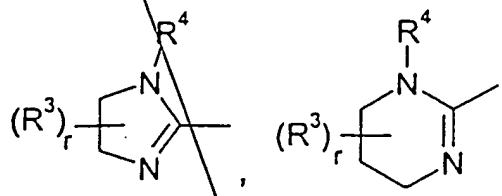
Sub B1

in all their stereoisomeric forms and mixtures thereof in all ratios, and their non-toxic physiologically tolerable salts.

Claim 3 (amended) A compound of claim 1 wherein B is (C_1-C_6)-alkyl or hydroxy, where all Bs are independent of one another;

D is -C(O)-N(R^6)-, bonded to the group E via its nitrogen atom;

E is selected from the group consisting of



and $R^6R^{6'}N$-C(=NR^6)-;

G is N or CH;

X is hydrogen;

Y is hydrogen;

contd. A2

Z is N;

Sub B1

R^1 is selected from the group consisting of (C_1-C_{18})-alkyl, (C_3-C_{14})-cycloalkyl, (C_3-C_{14})-cycloalkyl-(C_1-C_8)-alkyl-, (C_5-C_{14})-aryl, (C_5-C_{14})-aryl-(C_1-C_{14})-aryl-(C_1-C_8)-alkyl-, (C_5-C_{14})-heteroaryl and (C_5-C_{14})-heteroaryl-(C_1-C_8)-alkyl- where aryl, heteroaryl, cycloalkyl and alkyl can be substituted one, two or three times by at least one member of the group consisting of fluorine, chlorine, bromine, cyano, trifluoromethyl, nitro, hydroxycarbonyl-, (C_1-C_6)-alkyl, (C_1-C_6)-alkoxy, (C_1-C_6)-alkoxy-(C_1-C_6)-alkyl-, (C_1-C_6)-alkoxycarbonyl-, (C_1-C_6)-alkylcarbonyl-, (C_1-C_6)-alkylaminocarbonyl-, (C_1-C_6)-alkoxy-(C_1-C_6)-alkoxy, (C_5-C_{14})-arylcarbonyl-, (C_5-C_{14})-aryl-(C_1-C_8)-alkylcarbonyl-, (C_1-C_6)-alkanoylamino-, (C_5-C_{14})-arylsulfonylamino-, (C_1-C_6)-alkylsulfonylamino-, (C_1-C_6)-alkylamino-, di-$((C_1-C_6)$-alkyl)amino-, (C_1-C_6)-alkylsulfonyl, (C_1-C_6)-alkylaminosulfonyl-, (C_5-C_{14})-arylaminosulfonyl-, (C_5-C_{14})-aryl-(C_1-C_8)-alkylaminosulfonyl-, (C_5-C_{14})-arylsulfonyl-, (C_5-C_{14})-aryl-(C_1-C_8)-alkylsulfonyl-, (C_5-C_{14})-aryl and (C_5-C_{14})-heteroaryl;

R^2 is $-C(O)R^5$;

R^3 is selected from the group consisting of (C_1-C_6)-alkyl, fluorine, chlorine, bromine, cyano, hydroxy and (C_1-C_6)-alkoxy, where all R^3s are independent of one another;

R^4 is hydrogen or (C_1-C_4)-alkyl;

R^3 is hydroxy or (C_1-C_6)-alkoxy;

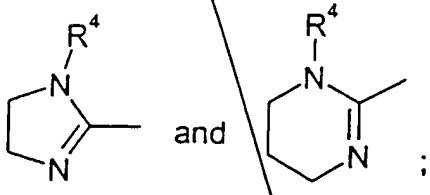
R^6 and $R^{6'}$ are selected from the group consisting of hydrogen, (C_1-C_6)-alkyl, (C_3-C_{14})-cycloalkyl, (C_3-C_{14})-cycloalkyl-(C_1-C_8)-alkyl and (C_5-C_{14})-aryl-(C_1-C_8)-alkyl-, or R^6 and $R^{6'}$ together with the nitrogen atom to which they are bonded form a 4-membered to 6-membered ring system which in addition to the nitrogen atom to which R^6 and $R^{6'}$ are bonded can contain one or two ring heteroatoms selected from the group consisting of nitrogen, oxygen and sulfur and which can be unsaturated or saturated,
where all R^6 and $R^{6'}$ are independent of one another;

r is zero, one, two, three or four;
s is zero, one or two;

in all their stereoisomeric forms and mixtures thereof in all ratios, and their non-toxic physiologically tolerable salts.

Claim 4 (amended) A compound of claim 1 wherein D is $-C(O)-N(R^6)-$, bonded to E via its nitrogen atom;

E is selected from the group consisting of



;

contd. A2

G is CH;

X is hydrogen;

Sub B1

Y is hydrogen;

Z is N;

R^1 is selected from the group consisting of (C_1-C_{18})-alkyl, (C_3-C_{14})-cycloalkyl-(C_1-C_8)-alkyl-, (C_5-C_{14})-aryl, (C_5-C_{14})-aryl-(C_1-C_8)-alkyl-, (C_5-C_{14})-heteroaryl and (C_5-C_{14})-heteroaryl-(C_1-C_8)-alkyl- where aryl, heteroaryl, cycloalkyl and alkyl can be substituted one, two, or three times by at least one member of the group consisting of fluorine, chlorine, bromine, cyano, trifluoromethyl, nitro, hydroxycarbonyl-, (C_1-C_6)-alkyl, (C_1-C_6)-alkoxy, (C_1-C_6)-alkoxy-(C_1-C_6)-alkyl-, (C_1-C_6)-alkoxycarbonyl-, (C_1-C_6)-alkylcarbonyl-, (C_1-C_6)-alkylaminocarbonyl-, (C_1-C_6)-alkoxy-(C_1-C_6)-alkoxy-, (C_5-C_{14})-arylcarbonyl-, (C_5-C_{14})-aryl-(C_1-C_8)-alkylcarbonyl-, (C_1-C_6)-alkanoylamino-, (C_5-C_{14})-arylsulfonylamino-, (C_1-C_6)-alkylsulfonylamino-, (C_1-C_6)-alkylamino-, di-$((C_1-C_6)$-alkyl)amino-, (C_1-C_6)-alkylsulfonyl-, (C_1-C_6)-alkylaminosulfonyl-, (C_5-C_{14})-arylaminosulfonyl-, (C_5-C_{14})-aryl-(C_1-C_8)-alkylaminosulfonyl-, (C_5-C_{14})-arylsulfonyl-, (C_5-C_{14})-aryl-(C_1-C_8)-alkylsulfonyl-, (C_5-C_{14})-aryl and (C_5-C_{14})-heteroaryl;

R^2 is $-C(O)R^5$;

contd Q/2

R^4 is hydrogen or (C_1-C_4)-alkyl;

R^5 is hydroxy or (C_1-C_6)-alkoxy;

Sub B1

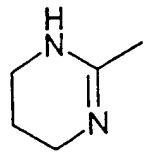
R^6 is hydrogen or (C_1-C_4)-alkyl;

s is zero;

in all their stereoisomeric forms and mixtures thereof in all ratios, and their non-toxic, physiologically tolerable salts.

Claim 5 (amended) A compound of claim 1 wherein D is -C(O)-NH-, bonded to E via its nitrogen atom;

E is



;

G is CH;

X is hydrogen;

Y is hydrogen;

Z is N;

contd. Q2

R^1 is selected from the group consisting of (C_1-C_{18})-alkyl, (C_3-C_{14})-cycloalkyl-(C_1-C_8)-alkyl-, (C_5-C_{14})-aryl, (C_5-C_{14})-aryl-(C_1-C_8)-alkyl, (C_5-C_{14})-heteroaryl and (C_5-C_{14})-heteroaryl-(C_1-C_8)-alkyl- where aryl, heteroaryl, cycloalkyl and alkyl can be substituted one, two or three times by at least one member of the group consisting of fluorine, chlorine, bromine, cyano, trifluoromethyl, (C_1-C_6)-alkyl, (C_1-C_6)-alkoxy and (C_5-C_{14})-aryl;

Sub B1

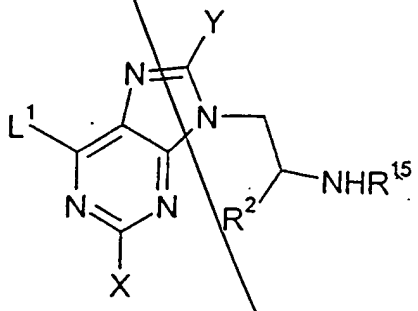
R^2 is $-C(O)R^5$;

R^5 is hydroxy or (C_1-C_6)-alkoxy;

s is zero;

in all their stereoisomeric forms and mixtures thereof in all ratios, and their non-toxic, physiologically tolerable salts.

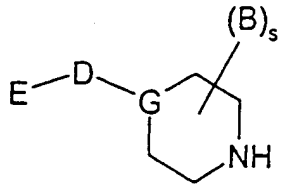
Claim 6 (amended) A process for the preparation of a compound of claim 1 comprising reacting a compound of the formula



V

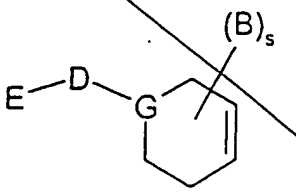
contd. Q2

with a compound of the formula VIa or with a compound of the formula VIB



VIa

and



VIb

wherein L^1 is a leaving group, R^{15} is R^1-SO_2- or an amino protecting group and B, D, E, G, X, R^2 and s are defined as in claim 1 but where functional groups can also be present in the form of precursor groups or in protected form.

Claim 7 (amended) A pharmaceutical composition, comprising a compound of claim 1 and a pharmaceutically acceptable carrier.

Cancel claims 8 to 10 and add the following claims.

Q3 Sub B1

--11. A method of treating osteoporosis in warm-blooded animals comprising administering to warm-blooded animals in need thereof an amount of a compound of claim 1 sufficient to treat osteoporosis.

12. A method of treating tumors in warm-blooded animals comprising administering to warm-blooded animals in need thereof an antitumor-effective amount of a compound of claim 1.